CLAIMS

1. A high-brightness mechanoluminescence material consisting of a composite semiconductor crystal represented by the general formula

$$xM^1A^1 \cdot (1-x)M^2A^2$$

(in the formula, each of M^1 and M^2 is, independently from the other, an element selected from Zn, Mn, Cd, Cu, Eu, Fe, Co, Ni, Mg and Ca, each of A^1 and A^2 is an atom selected independently from chalcogens with the proviso that M^1A^1 and M^2A^2 differ each from the other, and x is a positive number smaller than 1.).

2. The high-brightness mechanoluminescence material described in Claim 1 in which the composite semiconductor crystal has a mixed structure of the wurtzite-type structure and the zincblende-type structure.

3. The high-brightness mechanoluminescence material described in Claim 1 in which M^1 is Mn or Eu and A^1 and A^2 are each the same chalcogen as the other.

4. The high-brightness mechanoluminescence material described in Claim 1 in which M^2 is constituted of Zn, Cd or a combination of Zn and Cu.

5. A method for the preparation of the high-brightness mechanoluminescence material defined in Claim 1, which comprises the steps of;
mixing source materials of the constituent ingredients;
heating the thus obtained mixture in vacuum at a temperature lower than the sublimation point of the product to produce a composition represented by the general formula

$$xM^1A^1 \cdot (1-x)M^2A^2$$

(in the formula, each of M^1 and M^2 is, independently from the other, an element selected from Zn, Mn, Cd, Cu, Eu, Fe, Co, Ni, Mg and Ca, each of A^1 and A^2 is an atom selected independently from chalcogens and x is a positive number smaller than 1, with the proviso that M^1A^1 and M^2A^2 differ each from the other);
causing sublimation of the composition at a temperature equal to or higher than the sublimation point of the composition; and
crystallizing the thus generated sublimate by condensation at a temperature lower than the sublimation point thereof.